CLAIMS

1. An isolated or purified polynucleotide, characterized in that it comprises a nucleotide sequence with at least 60%, preferably at least 80% and more preferably at least 95% identity with SEQ ID NO:1 (DG747) or SEQ ID NO: 2 (DG772).

2. An isolated or purified polynucleotide, characterized in that it comprises at least 10 consecutive nucleotides identical to SEQ ID NO:1 or SEQ ID NO: 2.

3. An isolated or purified polynucleotide, characterized in that it hybridizes under highly stringent conditions with a polynucleotide according to claim 1 or claim 2.

4. An isolated or purified polypeptide, characterized in that it is coded for by a polynucleotides according to any one of claims 1 to 3.

5. An isolated or purified polypeptide, characterized in that it has at least 60%, preferably at least 80% and more preferably at least 95% homology with SEQ ID NO: 3 (DG747) or SEQ ID NO: 4 (DG772).

6. An isolated or purified polypeptide, characterized in that it comprises at least 5 consecutive amino acids identical to one of the sequences selected from the group formed by SEQ ID NOs: 3 to 7, and SEQ ID NO: 8.

7. An isolated or purified polypeptide, characterized in that it has at least 40%, preferably at least 60%, more preferably at least 80% and still more preferably at least 95% identity with one of the sequences selected from the group formed by SEQ ID NOs: 3 to 8, 10 and SEQ ID NO: 12.

8. A recombinant or chimeric recombinant polypeptide, characterized in that it comprises at least one polypeptide according to any one of claims 4 to 7.

9. An isolated or purified antigen, characterized in that it consists in a polynucleotide according to any one of claims 1 to 3, or a polypeptide according to any one of claims 4 to 8.

10. An antigenic conjugate constituted by polynucleotides according to any one of claims 1 to 3, and/or polypeptides according to any one of claims 4 to 8; and a support on which said polynucleotides/polypeptides are adsorbed.

11. A conjugate according to claim 10, characterized in that the support is constituted by microspheres, microparticles of latex beads, polyphosphoglycan microparticles (PGLA) or polystyrene microparticles.

12. Use of a conjugate according to claim 10 or 11, for immunizing individuals who are infected or susceptible of being infected with malaria.

13. Monoclonal or polyclonal antibodies specifically recognizing at least one of the polynucleotides, polypeptides and/or conjugates defined in claims 1 to 11.

14. Antibodies according to claim 13, characterized in that they are humanized.

15. A cloning or expression vector comprising a polynucleotide sequence according to any one of claims 1 to 3.

16. A vector according to claim 15, in which said polynucleotide sequence is incorporated into a site that is not essential to replication of said vector.

17. A vector according to claim 15 or 16, characterized in that said vector is selected from the group formed by plasmids, cosmids and phages.

18. A host cell comprising a vector according to any one of claims 15 to 18.

19. A recombinant *E. coli* cell selected from cells deposited at the CNCM on 23rd May 2001 with accession numbers I-2671 and I-2672.

20. An immunogenic composition comprising:

- at least one of the following elements: polynucleotides according to any one of claims 1 to 3, polypeptides according to any one of claims 4 to 8, conjugates according to claim 10 or 11; and
- a pharmaceutically acceptable vehicle.

21. An immunogenic composition according to claim 20, characterized in that it further contains at least one compound selected from the group formed by alum, QS21, montanide, $SBAS_2$ adjuvant and incomplete Freund's adjuvant.

22. An immunogenic composition according to claim 20 or 21, characterized in that the polypeptide molecule is adsorbed onto microparticles.

23. An immunogenic composition according to any one of claims 20 to 22, in which said polynucleotide molecule is in the form of DNA.

24. An immunogenic composition according to any one of claims 20 to 23, characterized in that it further comprises at least one epitope selected from the group formed by: the proteins CS, MSP-1, MSP-3, LSA-1, TRAP, STARP, SALSA, SALSA 1, SALSA II and LSA-3.

25. An immunogenic composition according to any one of claims 20 to 24, characterized in that it can produce a cell response and/or humoral response *in vivo* and/or *in vitro*.

26. An immunogenic composition according to any one of claims 20 to 25, characterized in that it can allow the production of γ-interferon by leukocytes from subjects immunized with irradiated sporozoites.

27. An immunogenic composition according to any one of claims 20 to 26, characterized in that it can produce a humoral IgG response.

28. An immunogenic composition according to claim 27, characterized in that it can produce a humoral type IgG1, IgG2, IgG3 and/or IgG4 response.

29. An immunogenic composition according to any one of claims 20 to 28, characterized in that it is capable of inducing, *in vivo* and *in vitro*, protection by a challenge infection with *Plasmodium falciparum*.

30. An anti-malaria vaccine comprising:

- at least one of the following elements: polynucleotides according to any one of claims 1 to 3, polypeptides according to any one of claims 4 to 8, conjugates according to claim 10 or 11; and
- a pharmaceutically acceptable vehicle.

31. A vaccine according to claim 30, characterized in that it further comprises at least one epitope selected from the group formed by: the proteins CS, MSP-1, MSP-3, LSA-1, TRAP, STARP, SALSA, SALSA 1, SALSA II and LSA-3.

32. A pharmaceutical composition comprising, as the active substance, one or more polyclonal or monoclonal antibodies according to claim 13 or 14, in association with a pharmaceutically acceptable vehicle.

33. A pharmaceutical composition according to claim 32, characterized in that it further contains at least one compound selected from the group formed by alum, QS21, montanide, $SBAS_2$ adjuvant and incomplete Freund's adjuvant.

34. Use of at least one of the following elements: polynucleotides according to any one of claims 1 to 3, polypeptides according to any one of claims 4 to 8, conjugates according to claim 10 or 11; antibodies according to claim 13 or 14; for the production of a drug intended for the treatment of malaria.

35. An *in vitro* malaria diagnostic method in an individual susceptible of being infected with *Plasmodium falciparum*, comprising the following steps:

a) bringing a biological tissue and/or fluid removed from an individual who is susceptible of being infected with *Plasmodium falciparum* under conditions allowing an immunological reaction into contact with an antibody according to claim 13 or 14 to allow the formation of immune complexes; and

b) detecting *in vitro* any immune complexes formed.

36. An *in vitro* malaria diagnostic method in an individual susceptible of being infected with *Plasmodium falciparum*, comprising the following steps:

a) bringing a biological tissue and/or fluid removed from an individual susceptible of being infected with *Plasmodium falciparum* under conditions allowing an immunological reaction into contact with at least one of the following elements: polynucleotides according to any one of claims 1 to 3; polypeptides according to any one of claims 4 to 8, conjugates according to claim 10 or 11; to allow the formation of immune complexes involving at least one of said elements and antibodies that may be present in said biological tissue or fluid; and

b) detecting *in vitro* any immune complexes formed.

37. A method according to claim 35 or 36, characterized in that in step a), the biological tissue and/or fluid is also brought into contact with at least one epitope selected from the group formed by: CS, MSP-1, MSP-3, LSA-1, TRAP, STARP, SALSA, SALSA 1, SALSA II or LSA-3.

38. An *in vitro* malaria diagnostic kit, comprising the following elements:

a) at least one element selected from the group formed by: polynucleotides according to any one of claims 1 to 3, polypeptides according to any one of claims 4 to 8, conjugates according to claim 10 or 11;

b) reagents for constituting a medium suitable for a binding reaction between a test sample and at least one of the elements defined in a); and

c) reagents allowing the detection of antigen-antibody complexes produced by said binding reaction, said reagents also possibly carrying a label susceptible of being recognized by a second labelled reagent.

39. An *in vitro* malaria diagnostic kit, comprising the following elements:

- antibodies as defined in claim 13 or 14;

- reagents for constituting a medium suitable for allowing a binding reaction between a test sample and at least one said antibody ; and
- reagents allowing the detection of antigen-antibody complexes produced by said binding reaction, said reagents also possibly carrying a label susceptible of being recognized by a second labelled reagent.

40. An *in vitro* malaria diagnostic kit according to claim 38 or 39, characterized in that it further comprises at least one peptide molecule selected from the group formed by: CS, MSP-1, MSP-3, LSA-1, TRAP, STARP, SALSA, SALSA 1, SALSA II and LSA-3.

41. An *in vitro* malaria diagnostic kit according to any one of claims 38 to 40, characterized in that it also comprises the SBAS2 adjuvant.